

ES

<b>Notice of Allowability</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/723,619		TAKEUCHI ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Jannelle M. Lebron		2861	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to the amendment filed 01/03/2006.
2. ☒ The allowed claim(s) is/are 1-12 and 14-20.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date <u>03/22/04</u></li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____.</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____.</li> </ol> |
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## **DETAILED ACTION**

### ***REASONS FOR ALLOWANCE***

The following is an examiner's statement of reasons for allowance:

- Claim 1:

Prior art does not disclose or suggest either alone or combined as claimed "wherein an ink ejection operation is performed successively in a time-sharing mode for each of the groups of ink channels, while satisfying conditions:

$$| \text{CTC} + \text{CTE} | \leq 10 (\%) \text{ and } | \text{CTE} | \geq 5 (\%),$$

and "wherein CTC and CTE have a canceling effect on each other."

- Claim 12:

Prior art does not disclose or suggest either alone or combined as claimed "wherein an ink ejection operation is performed successively in a time-sharing mode for each of the groups of ink channels, while satisfying a condition:

$$| \text{CTC} + \text{CTE} | \leq 10 (\%) \text{ and } | \text{CTE} | \geq 5 (\%).$$

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 5,016,028 to Temple discloses a high density, multi-channel array, electrically pulsed droplet deposition apparatus in which crosstalk attributable to fringe field effects arising upon actuation of shear mode channel actuators is minimized. The apparatus comprises a bottom sheet of piezoelectric material poled in a direction normal to the sheet and having a plurality of parallel channels mutually spaced in an array direction normal to the length of the channels and each defined by facing side walls on a bottom surface extending between the side walls. Electrodes are provided on opposite sides of each of at least some of the side walls to form shear mode actuators for effecting droplet expulsion from the channels associated with the actuators.

US Patent 4,887,100 to Michaelis et al. discloses a pulsed droplet ink ejector with thin channels extending in parallel between an ink manifold and a nozzle plate providing a nozzle for each channel. Side walls are formed almost entirely of piezoelectric material so as to be displaced transversely into a selected channel on the application of an electric field. The channels are assigned alternately to first and second groups of channels, only one group of channels being capable of actuation at any one instant.

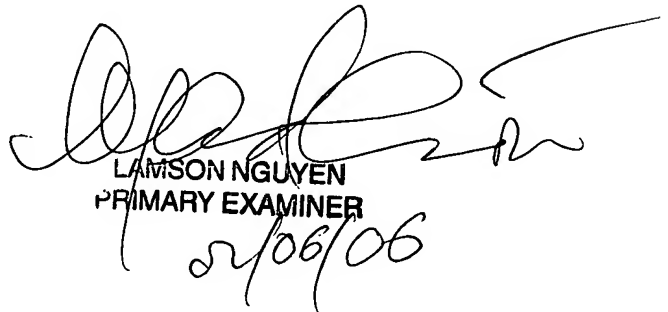
Art Unit: 2861

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jannelle M. Lebron whose telephone number is (571) 272-2729. The examiner can normally be reached on Monday thru Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JML  
02/06/2006

  
LAMSON NGUYEN  
PRIMARY EXAMINER  
2/06/06